

(b) *Hoists and elevators.* (1) An examination of the rope fastenings for defects;

(2) An examination of sheaves for broken flanges, defective bearings, rope alignment, and proper lubrication; and

(3) An examination of the automatic controls and brakes required under § 77.1401.

(Sec. 101, Federal Mine Safety and Health Act of 1977, Pub. L. 91-173 as amended by Pub. L. 95-164, 91 Stat. 1291 (30 U.S.C. 811))

[48 FR 53241, Nov. 25, 1983]

**§ 77.1404 Certifications and records of daily examinations.**

At the completion of each daily examination required by § 77.1403, the person making the examination shall certify, by signature and date, that the examination has been made. If any unsafe condition is found during the examinations required by § 77.1403, the person conducting the examination shall make a record of the condition and the date. Certifications and records shall be retained for one year.

(Sec. 101, Federal Mine Safety and Health Act of 1977, Pub. L. 91-173 as amended by Pub. L. 95-164, 91 Stat. 1291 (30 U.S.C. 811))

[48 FR 53241, Nov. 25, 1983, as amended at 60 FR 33723, June 29, 1995]

**§ 77.1405 Operation of hoisting equipment after repairs.**

Empty conveyances shall be operated at least one round trip before hoisting persons after any repairs.

(Sec. 101, Federal Mine Safety and Health Act of 1977, Pub. L. 91-173 as amended by Pub. L. 95-164, 91 Stat. 1291 (30 U.S.C. 811))

[48 FR 53241, Nov. 25, 1983]

**WIRE ROPES**

**AUTHORITY:** Sections 77.1430 through 77.1438 issued under sec. 101, Federal Mine Safety and Health Act of 1977, Pub. L. 91-173 as amended by Pub. L. 95-164, 91 Stat. 1291 (30 U.S.C. 811).

**SOURCE:** Sections 77.1430 through 77.1438 appear at 48 FR 53241, Nov. 25, 1983, unless otherwise noted.

**§ 77.1430 Wire ropes; scope.**

(a) Sections 77.1431 through 77.1438 apply to wire ropes in service used to hoist—

(1) Persons in shafts and slopes underground;

(2) Persons with an incline hoist on the surface; or

(3) Loads in shaft or slope development when persons work below suspended loads.

(b) These standards do not apply to wire ropes used for elevators.

**§ 77.1431 Minimum rope strength.**

At installation, the nominal strength (manufacturer's published catalog strength) of wire ropes used for hoisting shall meet the minimum rope strength values obtained by the following formulas in which "L" equals the maximum suspended rope length in feet:

(a) *Winding drum ropes* (all constructions, including rotation resistant).

For rope lengths less than 3,000 feet:

Minimum Value=Static Load $\times$ (7.0–0.001L)

For rope lengths 3,000 feet or greater:

Minimum Value=Static Load $\times$ 4.0

(b) *Friction drum ropes.*

For rope lengths less than 4,000 feet:

Minimum Value=Static Load $\times$ (7.0–0.0005L)

For rope lengths 4,000 feet or greater:

Minimum Value=Static Load $\times$ 5.0

(c) *Tail ropes* (balance ropes).

Minimum Value=Weight of Rope $\times$ 7.0

[48 FR 53241, Nov. 25, 1983; 48 FR 54975, Dec. 8, 1983]

**§ 77.1432 Initial measurement.**

After initial rope stretch but before visible wear occurs, the rope diameter of newly installed wire ropes shall be measured at least once in every third interval of active length and the measurements averaged to establish a baseline for subsequent measurements. A record of the measurements and the date shall be made by the person taking the measurements. This record shall be retained until the rope is retired from service.

[48 FR 53241, Nov. 25, 1983, as amended at 60 FR 33723, June 29, 1995]

**§ 77.1433 Examinations.**

(a) At least once every fourteen calendar days, each wire rope in service shall be visually examined along its entire active length for visible structural